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ABSTRACT

Elementary school teachers were trained in specific classroom behaviors designed to improve student achievement. Effects of the training were measured primarily in terms of academic outcomes for underachievers; outcomes for normal and overachieving students were also examined. In addition to a focus upon achievement, the study was also designed to examine effects of teacher influence on school anxiety and classroom trust. Pupils' levels of academic achievement were identified (1) by calculating percentile ranks for intelligence and scholastic performance and (2) by grouping as under- and overachievers those students whose two percentile ranks significantly differed. Teachers were trained to provide more positive feedback, to understand the needs of underachievers, and to involve more students in classroom discussion. Actual classroom demonstration lessons enabled the teachers to observe the training concepts in operation. Analysis of variance and t-tests were used to test the efficacy of training. Results indicated that training led teachers to increase positive feedback with students and decrease negative feedback. Academic achievement improved for all but the overachievers, classroom trust increased, and school anxiety decreased. (Author/DB)

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DEVELOPING A STRATEGY FOR MINIMIZING UNDERACHIEVEMENT THROUGH TEACHER CLASSROOM BEHAVIOR

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Abstract

Underachievement in the secondary and elementary education is a problem that faces almost every education system despite their efficiency. The problem is more acute in the developing countries which are already struggling to get the best out of their meagre resources. Research has so far been able to identify a fairly large number of variables that are associated with the phenomenon of under achievement. These are, by and large, the various characteristics of students. In this study an effort has been made to minimize underachievement experimentally through manipulating teacher classroom behavior which in turn was shaped through a tailor made training program. The experiment shows a definite possibility to approach this problem which at the same time does not cost the normal and overachievers. Also it does not require any form of special streaming, instead it provides a viable alternative within the main stream.

DEVELOPING A STRATEGY FOR MINIMIZING UNDERACHIEVEMENT THROUGH TEACHER CLASSROOM BEHAVIOR

Educational accountability is a fast spreading concept and practice. As long as education will need and demand allocation of funds from national exchequer its claim will remain rival to other sectors of economy. Just as in other sector investment needs to be justified by the economic returns education connot be an exception any longer. Unfortunately the product in education is not amendable to straight forward methods of measurement of economic returns and thus easily justify its claim as a competitive sector of national investment along with other sectors of economy. Moreover, as against the educational investment and even private expenditure the quantity and quality of the product are being marred by the comparatively lesser number of outstanding students and huge amount of wastage and stagnation. This is happening at all stages, and more so, at the primary level. If education is to justify investment the emphasis will be required to be placed on maximal growth and development of potential. As a developing nation struggling to distribute the opportunities equally and develop each individual to her/his full potential it is necessary to find out ways to improve the educational achievement and face the issue of accountability squarely.

In primary education the glaring need is bringing all the pupils to a standard relevant to the objectives of primary education. Underachievement is a problem that needs immediate attention of the researchers as well as planners. Reviews of Indian research related to underachievement (Dave 1974, Anand and Dave, 1979) reveal it to be related to the poor socioeconomic background, lack of facilities at home and in school, and certain personality variables of the underachievers themselves.

The studies on underachievement in other countries does not appear to be very different. Firstly this probelm has not received very wide attention. Secondly, the studies do not cover adequate ground to effectively handle the problem to solve it. Lohenstein (1977) in a review of recent literature classifies the studies in five different sets. These are behavior approaches, development of interests and motivation, measuring and diagnosis of underachievement, training teachers' attitude and drug therapy. While most of the studies deal with student characteristics as correlates of academic achevement or underachievement (Belmont et al., 1976, Chang 1976, Schwartzer 1975) a few studies do adopt experimental methods of modifying achievement. Some of the techniques used are on effect of Ritalin (Rie et al., 1976a and 1976b), effect of achievement motivation training (Ryals, 1975) increase in direct reinforcement (Walker and Hops 1976).

We believe that when the correlation types of research on student achievement are important in understanding the phenomenon they may not necessarily lead to solving the problem. For it is difficult for the school personnel to control the factors outside the school and to a very large extent even the school facilities. Guidance services are rather rare in India and no significant change is expected in the near future. An analysis of the teachers' role in the school and in the classroom shows that teachers can help in solving the problem of underachievement to some extent. A teacher in the classroom acts both as the teacher and the guidance worker. Maybe some minor alternation in his behavior can help solve the problem.

The present study has its genesis in the line of thinking. The studies on teacher behavior (Jangira and Sharma* 1974, and Jangira 1979 and Sharma* 1972) show that teachers can be trained to modify their behavior. Also it can be inferred from the review and experiment (Sharma* 1972) referred above that teacher classroom behavior is related to pupil achievement. In the present study an effort has been made to develop a strategy of teacher classroom behavior and experimentally test its efficacy in terms of improvement of achievement of the underachievers primarily; however, normal and overachievers have also been taken into the fold of the study.

A strategy is usually defined as a set of preplanned acts to attack a problem. As the title shows it was planned to modify the teacher behavior in the classroom in a planned manner and examine its impact on pupils achievement. It is an ethical question in education that none should suffer at the cost of other. Hence, the emphasis was though on underachievers the effect of the strategy was also examined on the normal and over-achievers. This was also consistent with our target of identification and developing a strategy for better achievement of underachievers in an usual classroom so that it does not demand any special provision.

OBJECTIVE AND HYPOTHESES

The main objective of the study was to see the effect of particularly designed teacher classroom behavior on the under achievers, and also on the normal and overachievers. It also aimed at examining the effect of the modified teacher classroom behavior on two other variables, namely, classroom trust and school anxiety. These objectives eventually made it necessary to aim at developing a teacher classroom behaviour to minimize under achievement. The null hypotheses formulated were

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1. There will be no change in the pupil's achievement due to the changed teacher classroom behavior.

2. There will be no change in the pupils' classroom trust due to changed teacher classroom behavior.

3. There will be no change in the pupils' anxiety due to the changed teacher classroom behavior.

All these hupotheses were tested at .05 level of significance.

DESIGN

Research studies on correlates of achievement as reported in Buch* (1974 and 1979) adopted mainly the methods of correlational research. In a few studies prediction analyses have also been used. The outstanding problem of the present investigation was to find out teacher classroom behavior as a factor affecting underachievement of pupils. The selected design was single group pretest posttest design. However since each group was examined in terms of three types of achievers -- the under-achievers, normal achievers and overachievers they formed non-equivalent groups and comparisons of all these groups both at the pretest and post-test levels resulted in experimental designs with nonequivalent groups.

SAMPLE

The study was conducted in a school located in the ~~colony~~ municipality of Bhopal, capital city of the state of Madhya Pradesh (India). This school was selected as it volunteered to help conduct the experiment. The sample comprised all the pupils of classes three and four and all teachers teaching these classes. Elementary classes were taken up on the assumption that problem of underachievement starts crystalizing around the lower classes and if they can be remedied at this stage the achievement at higher level

* In all, summaries of 92 research studies are published in these two references along with reviews.

may also improve. The pupil sample consisted of sixty-six boys and girls - initially thirty-three in each class. However seven pupils did not appear in one of the other examinaton, hence were not considered in data anlayses. The experiment was conducted with four teachers.

INSTRUMENTATION

The Raven's Progressive Matrices Test was used to find out the intelligence percentiles of the students within their groups. A Classroom Behavior Observation Schedule was especially developed to observe teachers. Academic achievement scores were based on the records of previous class examination as well as monthly terminal and annual examination results. Boxell's Test of School Anxiety (Cohen 1969) was used to measure the school anxiety. The Preadolescent Classroom Trust Scale (Pareek and Rao, 1974) was used to measure classroom trust.

DATA COLLECTION

The study involved data collection in differenct steps over a period of five and one half months. A stepwise account of data collection is given below.

I. Identification of Pupils

For identifying over, normal and underachievers the percentile procedure was followed. The difference between the lowest and the highest percentile scores on academic achievement and intelligence were calculated. All those pupils whose difference scores for the two percentiles were above or below the quarter of this difference were termed as over and underachievers respectively and the rest were called as the normal achievers. This is one of the standard methods of identifying over and underachievers (Deo, 1972).

II. Pretest

The pretest involved the observation of teachers classroom behavior towards the three group of pupils. All the four teachers were observed for three hours each over six periods in rotation. The teacher classroom behavior was mainly covered in terms of incidences of pupil involvement and positive and negative feedback. Pupils achievement marks for the latest terminal examination before starting the experiment were collected. Boxall's Test of School Anxiety and Preadolescent Classroom Trust Scale were also administered to the students before the experiment.

III. The Training of Teachers

The training of teachers involved creating an awareness towards the meaning of underachievement, the need of underacheivers in the social context of the classroom. Two films namely, Naya Masterji (The New Teacher) and the Problem Child were screened. Both the films emphasize the role of the teacher in changing the social climate of the class by recognizing all the pupils as individuals as well as giving every child a chance to come forward with his potentials. This initiated the teachers to recognize every pupil in his/her class as individuals. The next step was to help them analyze their own teaching in this context. They were inspired to involve maximum number of pupils in the classroom discussion, to use more positive feedback and restrain from the use of nagative feedback. Handouts were given on classroom involvement, positive feedback and negative feedback for further clarification of the concepts. Actual classroom demonstration lessons were organized for the teachers to see the concepts in operation. The training period lasted for ten days in all.

IV. POSTTEST

The posttest involved the observation of the teachers towards the end of the academic session and three weeks after the completion of training. They were observed for three hours each over six periods. The final examination marks, the scores on school anxiety and classroom trust taken again, were the posttest scores.

ANALYSIS

1. The first step in data analysis was to establish the efficacy of the training. The following table gives the percentage of occurence of incidents of involvement of pupils before and after training.

Table I
Percentage of occurrences of incidents of pupil involvement

Teacher	Before Training/ After Training (BT/AT)	Overachievers (OA)	Normalachievers (NA)	Underachievers (UA)
T_1	BT	25.23	18.90	12.95
	AT	13.86	11.95	14.01
T_2	BT	18.22	14.67	12.78
	AT	14.73	15.76	18.26
T_3	BT	21.30	20.55	17.05
	AT	14.22	12.53	18.31
T_4	BT	16.67	15.22	15.70
	AT	12.05	12.18	14.59

The above table shows that in general, before training all the teachers involved over-achievers more as compared to the normal and underachievers. In the

after training period the increased percentages of involvement of normal and underachievers indicate the effect of changed teacher behavior. The Table II gives a similar account of positive feedback.

Table II
Percentage Distribution of Positive Feedback

Teachers	BT/AT	OA	NA	UA
T_1	BT	13.18	9.54	5.00
	AT	18.29	13.57	20.06
T_2	BT	15.39	14.32	8.99
	AT	20.62	18.85	24.45
T_3	BT	14.29	12.28	5.76
	AT	18.31	14.94	19.04
T_4	BT	16.67	11.11	7.00
	AT	20.20	17.81	21.95

This table also shows the change in the teacher behavior towards normal and underachievers in the posttraining period. Table III shows the change in the use of negative feedback in the posttraining period.

Table III
Percentage Distribution of Negative Feedback

Teacher	BT/AT	OA	NA	UA
T_1	BT	4.09	5.45	5.45
	AT	3.10	19.17	3.25
T_2	BT	3.31	4.62	7.69
	AT	0.29	1.32	0.74
T_3	BT	1.00	2.76	5.01
	AT	0.40	0.48	7.92
T_4	BT	3.38	4.59	9.66
	AT	0.27	0.40	0.53

The above table helps to infer that the teachers reduced the use of negative feedback to all except for T_3 in whose case it has increased. The modified teachers behavior increased the chances of pupil participation as well as recognition.

2. The next step was to find out the effect of the modified teacher behavior on achievement, school anxiety and classroom trust. Two different types of statistical analyses were applied - t tests were used for within the group differences and analysis of variance for between the group differences. Table IV gives the values for the significance of difference in the mean scores of pretest and posttests for over, normal and underachievers for the three measures of pupil effects. Analysis was done classwise.

Table IV
Significance of difference in means on Pre and Post Tests

Variables	Class III			Class IV		
	OA	NA	UA	OA	NA	UA
Achievement	-0.27	8.71*	5.68*	3.25**	5.82*	3.00**
Classroom Trust	8.09*	6.06*	12.58*	6.78*	12.09*	5.99*
School Anxiety	-8.61*	-9.56*	-7.10*	-11.54*	-12.50*	-9.82*

* significant at .01 level ** significant at .05 level

The t values in the above table indicate that the pretest posttest scores for the various measures differed significantly in all cases except for academic achievement of the overachievers in class III. It can be inferred

that the performance of all pupils improved after the training of teachers. The strategy benefited not only the underachievers but also the other two groups. Analysis of variance was used for between the group difference. The study involved two conditions of pretest and posttest with three measures in two classes (2X3X2). A total of twelve analysis of variance were calculated. The table V below gives the F ratios and differences of significance.

Table V
F Ratio for Difference in Pretest and Posttest
Measures for Over, Normal and Underachievers

	Class III		Class IV	
Pretest	F-Ratio	Significant Difference	F-ratio	Significant Difference
Achievement	8.95*	OA-NA = 20.83* OA-UA = 21.09*	1.56	
Classroom Trust	2.36		2.67	
School Anxiety	3.99		4.65**	OA-UA = 2.59*
Posttest				
Achievement	2.189		5.32*	OA-NA = 10.74** OA-UA = 18.26*
Classroom Trust	2.69		0.86	
School Anxiety	2.78		1.91	

* significant at .01 level ** significant at .05 level

The results for analysis of variance show that overachievers were better than the normal and underachievers in pretest academic achievement scores for class III. For other vairables F ratios were not found to be significant

in class III. It implies that none of the groups differed significantly in classroom trust and school anxiety. In the case of class IV overachievers gained more than normal and underachievers in the pretest achievement scores. Again, in the measures of the school anxiety in pretest the underachievers of class IV showed more anxiety than over and normal achievers.

To summarize, the null hypotheses framed for achievement was rejected for among the group analysis for class IV and for within the group analysis for both the classes. The null hypotheses for classroom trust was partially rejected as within the group difference was found significant, and same was the case for the hypothesis on school anxiety. Also, the results of the study favored the achievement of the underachievers without any negative effect on the other two groups. Instead, they too gained through the new strategy.

CONCLUSIONS

This research is an initiative in using teacher behavior as a variable for improving underachievement. In order to increase the dependability and generalizability of the results it would be necessary to duplicate the experiment on a larger sample and in multiple situations. It would also need to be carried out with more sophisticated designs and with greater control on certain other variables. There is a need to study the problem of underachievement and its modificability through moderation in teacher classroom behavior from class I where most children begin their education in India, and follow it up right through all the classes in the primary education.

The teacher classroom behavior has been found to be related to isolated measures of pupil achievement. There is need to identify mean-

ingful patterns of these relationships if these types of research has to find direct application for classroom practices. Finally this study raises an important question regarding previous studies on teacher classroom behavior and pupil achievement. With the present study it is possible to guess that the contribution of underachievers to the growth in mean pupil performance due to teacher behavior is more than that of their counterpart. As a result it needs a reanalysis of the data to really see how much gain has been made by each category of pupils that is over, normal and underachievers.

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